

# **Career and Technical Education in NC Community Colleges**

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President

***NC Community College System***

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# Career and Technical Education: Middle Job Preparation

- Education and training programs that prepare Americans for “**middle jobs**” are commonly referred to as career and technical education (CTE).
- **Middle jobs** require more education and training than high school but less than a bachelor’s degree.
- **Middle jobs** have a minimum earnings threshold of \$35,000 a year, which was 185 percent of the poverty line earnings of a family of four in 2011.

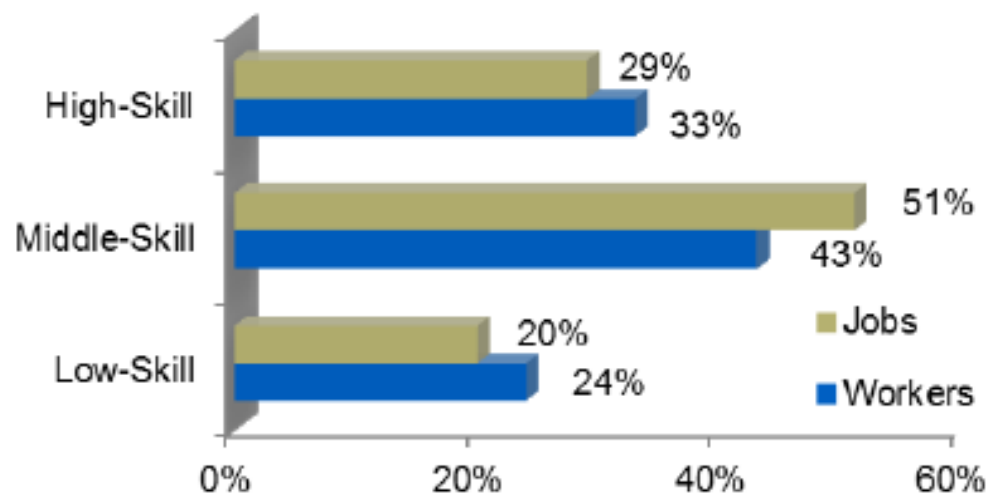
*-Carnevale, Jayasundera, Hanson, September, 2012, “Career and Technical Education Five Ways That Pay Along the Way to the B.A.”*

# Middle Jobs in NC

## North Carolina's Skills Mismatch: A Middle-Skills Gap

In 2009, about 51 percent of North Carolina's jobs were in middle-skill occupations. But only 43 percent of the state's workers likely have the appropriate training for these jobs.

North Carolina Jobs and Workers by Skill Level, 2009



Sources: U.S. Department of Labor and U.S. Bureau of the Census

# Jobs Employers Can't Fill

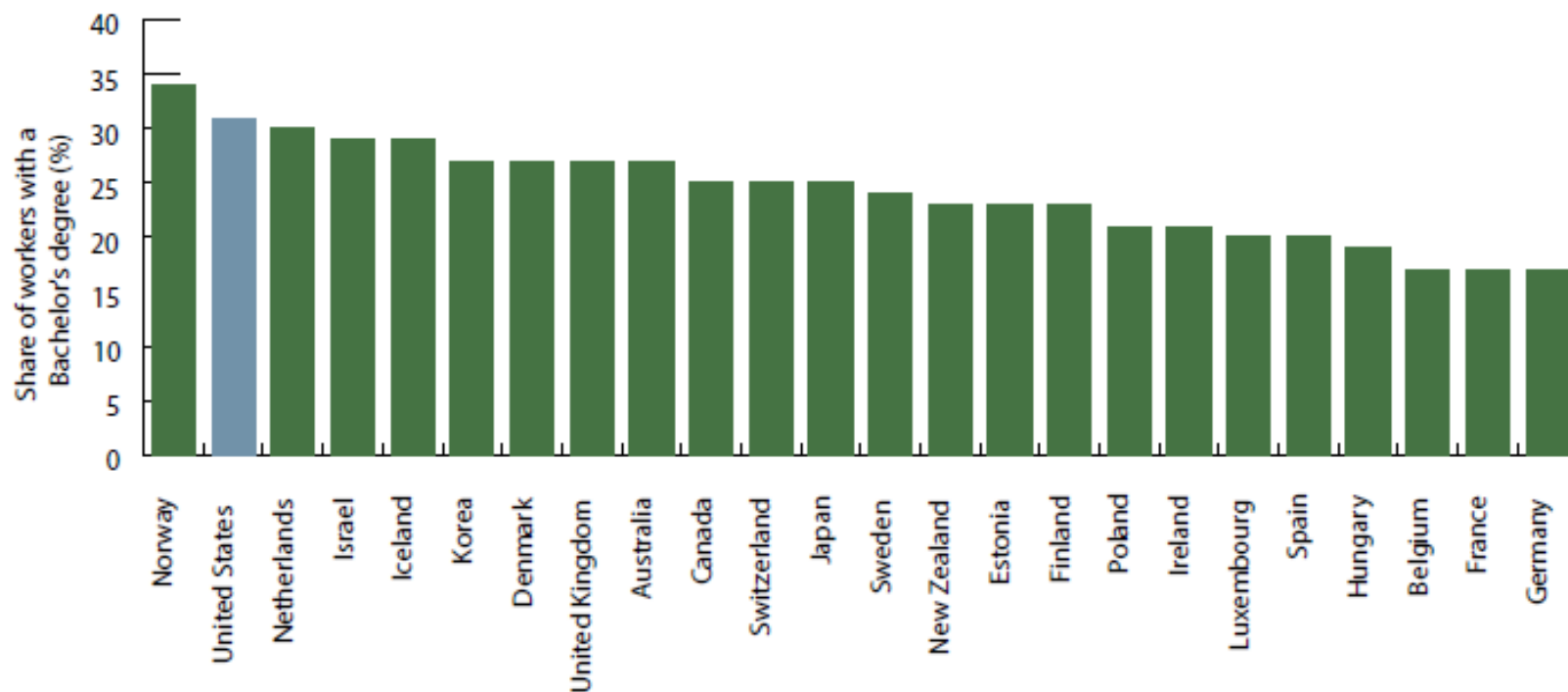
- **Welders**
- **Truck Drivers**
- **Software Developers**
- **Laborers (Lack of Experience/Technical Skills)**
- **Nurses**
- **Machinists**
- **Accountants**
- **Scientific Researchers**
- **Administrative Assistants**
- **Leisure and Hospitality Workers**
- **Repair Technicians**

Daniel Bukszpan, CNBC, Posted 12 March 2012. Data from the Bureau of Labor Statistics and the ManPowerGroup employment agency, as well as comments from employers and other placement firms.

# U.S. Baccalaureate Attainment

(Carnevale, September, 2012)

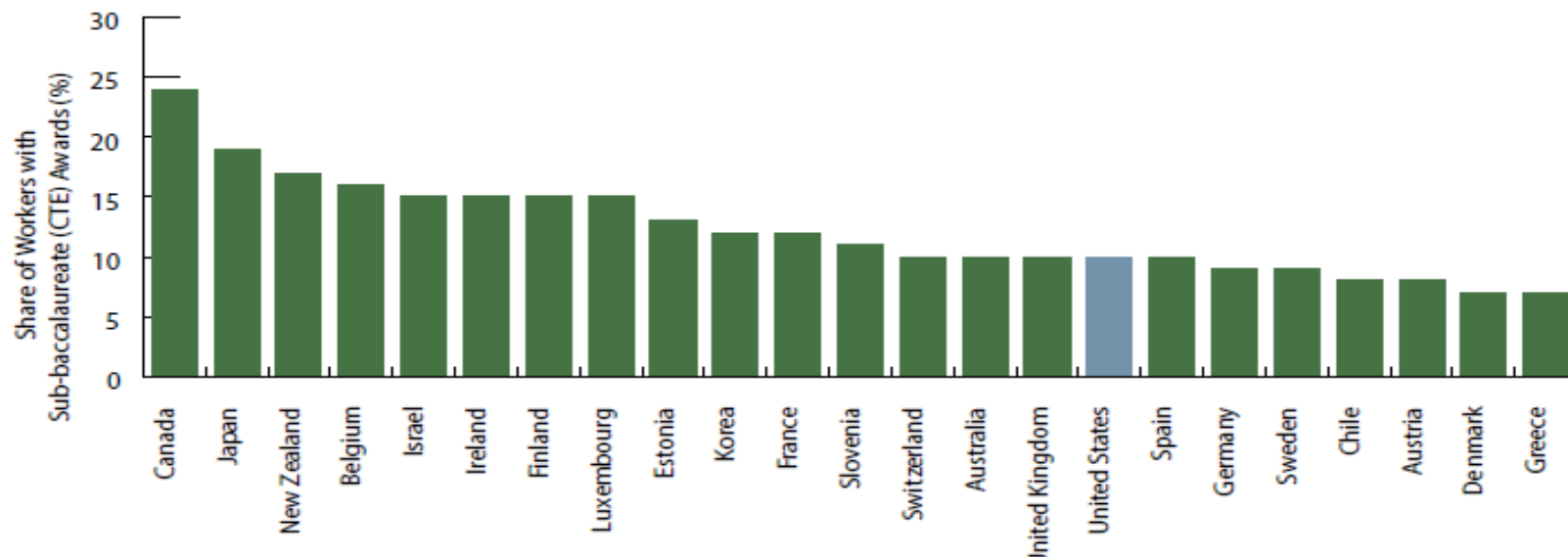
**Figure 7.** The United States ranks second internationally in baccalaureate attainment.



# U.S. Sub-baccalaureate Attainment

(Carnevale, September, 2012)

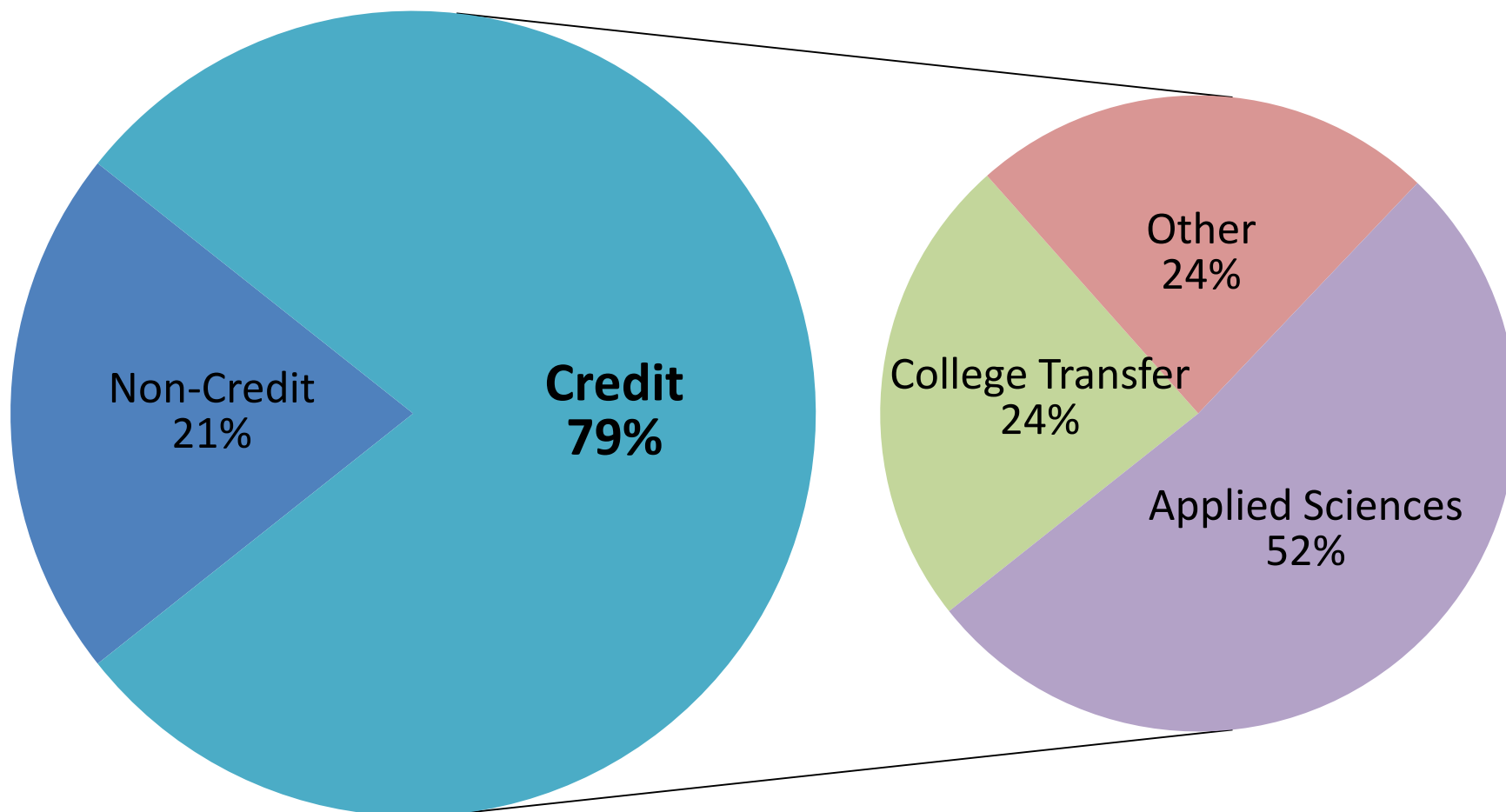
**Figure 8.** The United States ranks 16th internationally in sub-baccalaureate attainment.



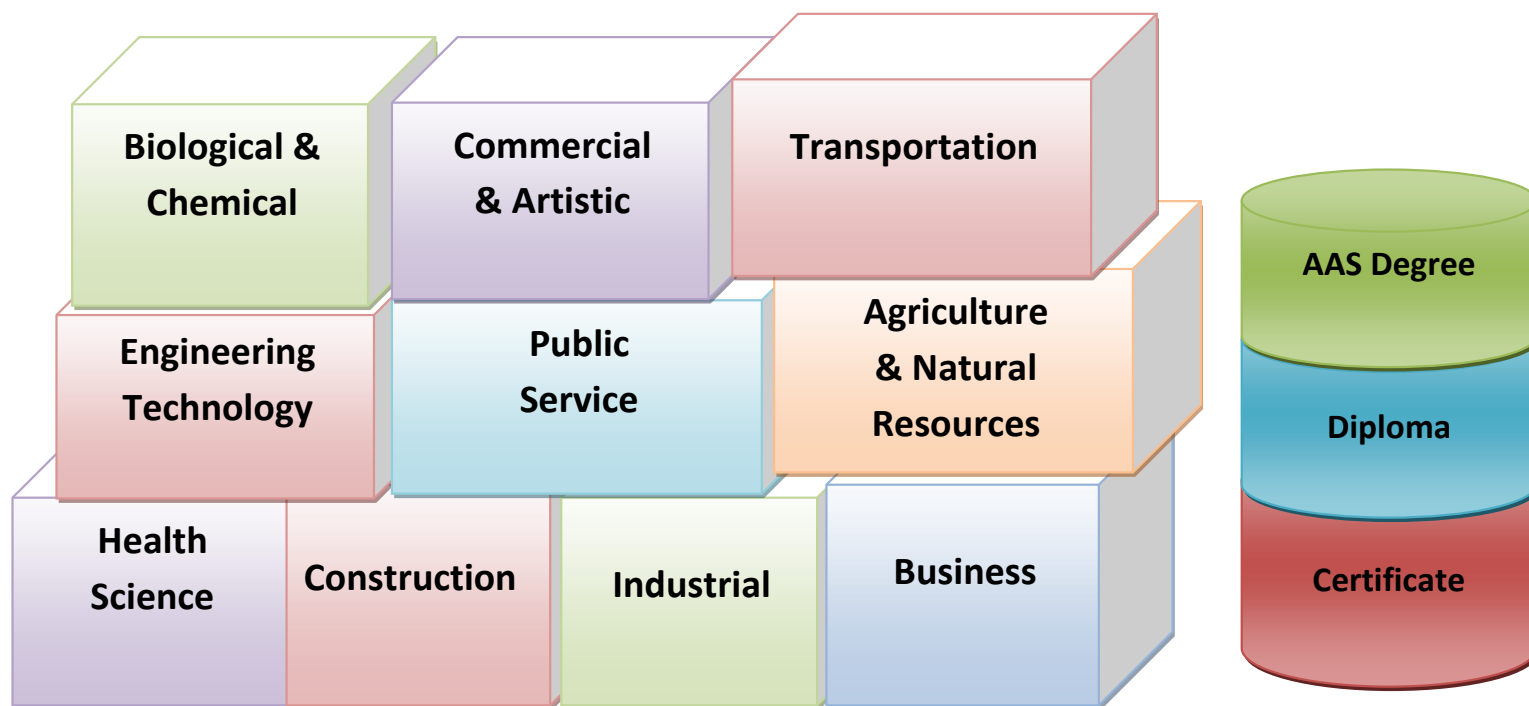
SOURCE: Organisation of Economic Co-operation and Development, 2011. See Annex 3 for notes: <http://www.oecd.org/edu/eag2011>

**Figure 9.** Sub-baccalaureate attainment is especially low among young workers, relative to other industrialized countries.

# Enrollment Breakdown

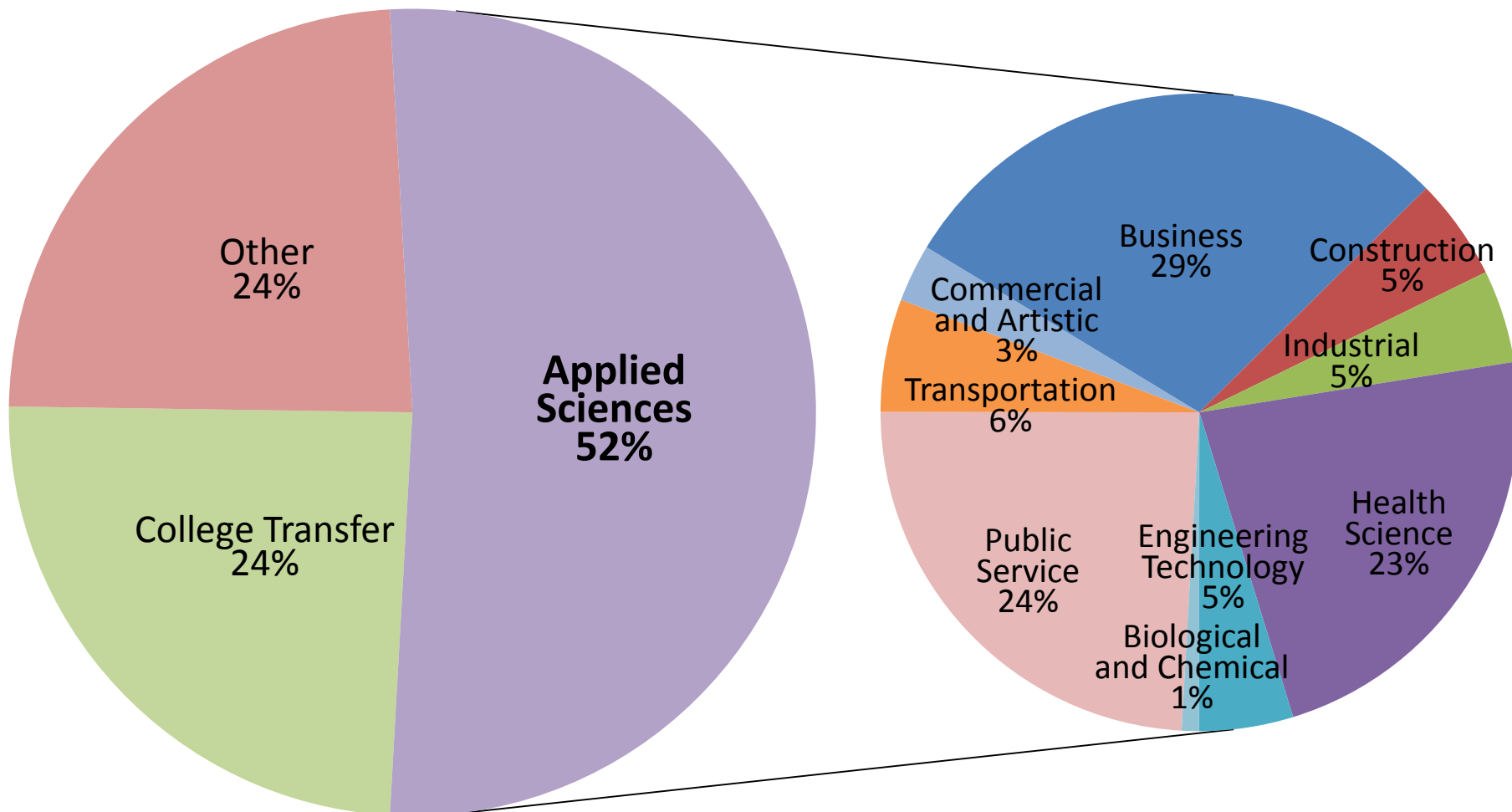


# Career and Technical Education: Ten Pathways Leading To Three Credentials

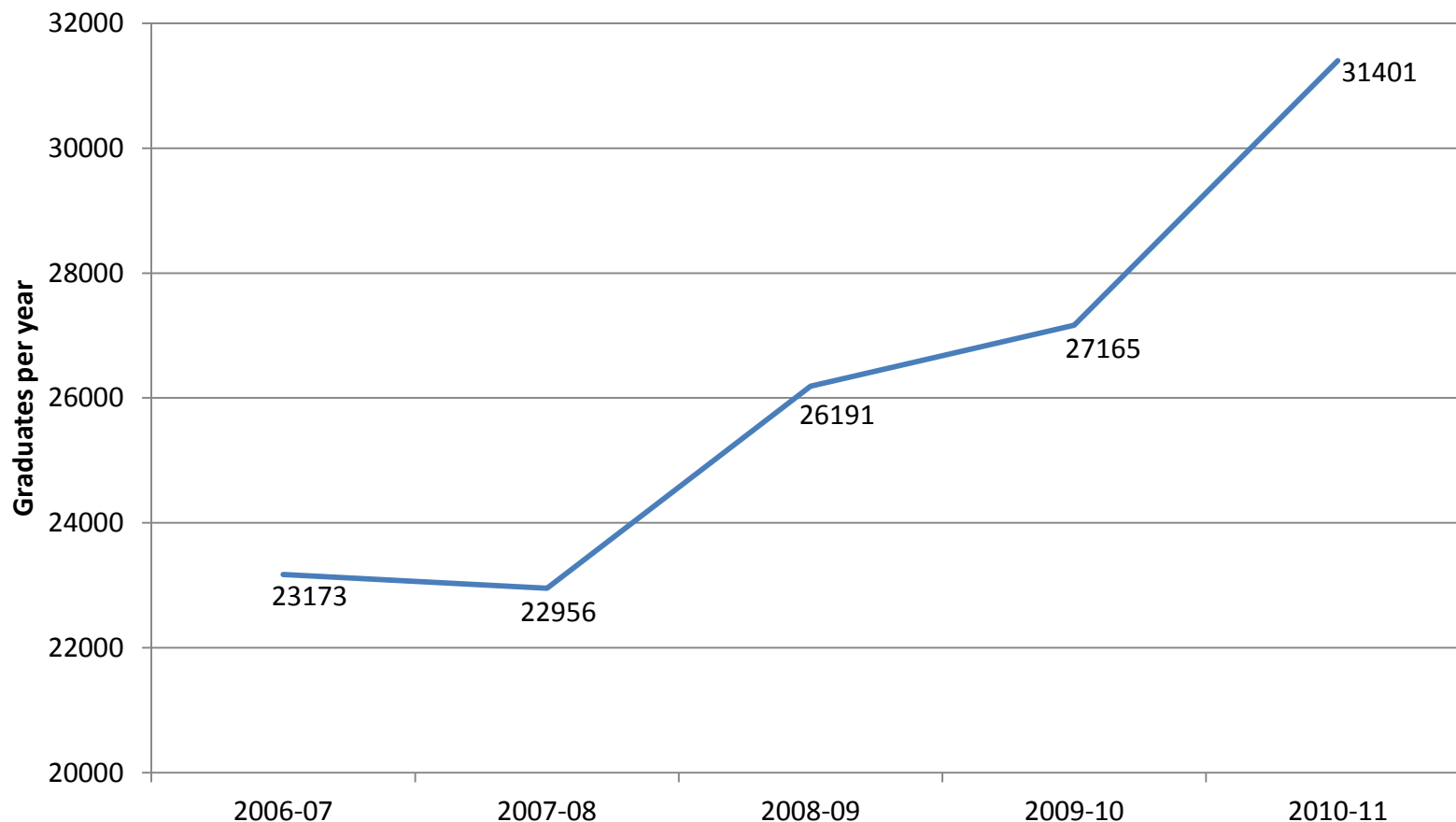




## Breakdown of Applied Sciences Enrollment

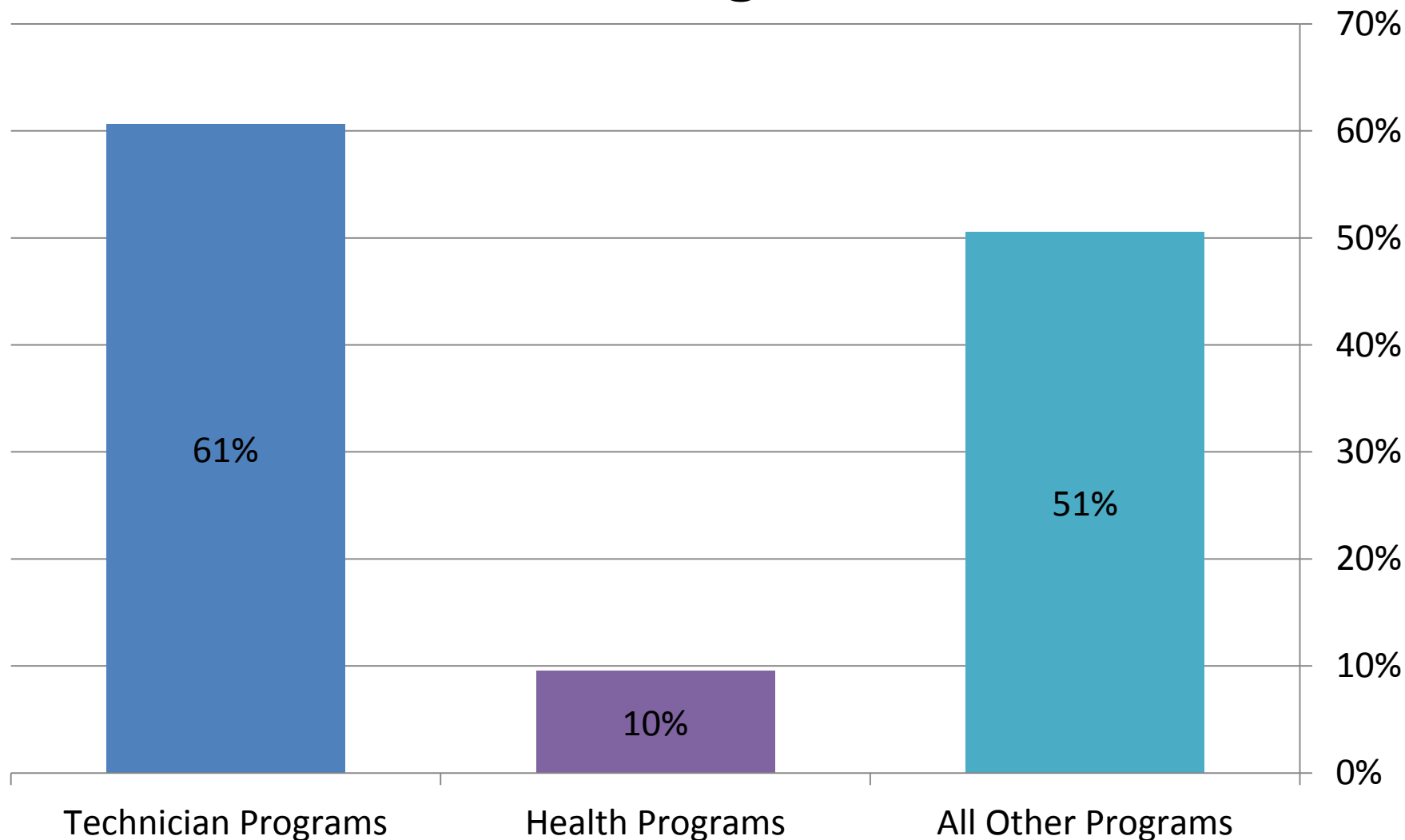


# Technical Education Graduates



Source: NCCCS Data Warehouse ANNTBL13-II

## Three-Year Change in Graduates



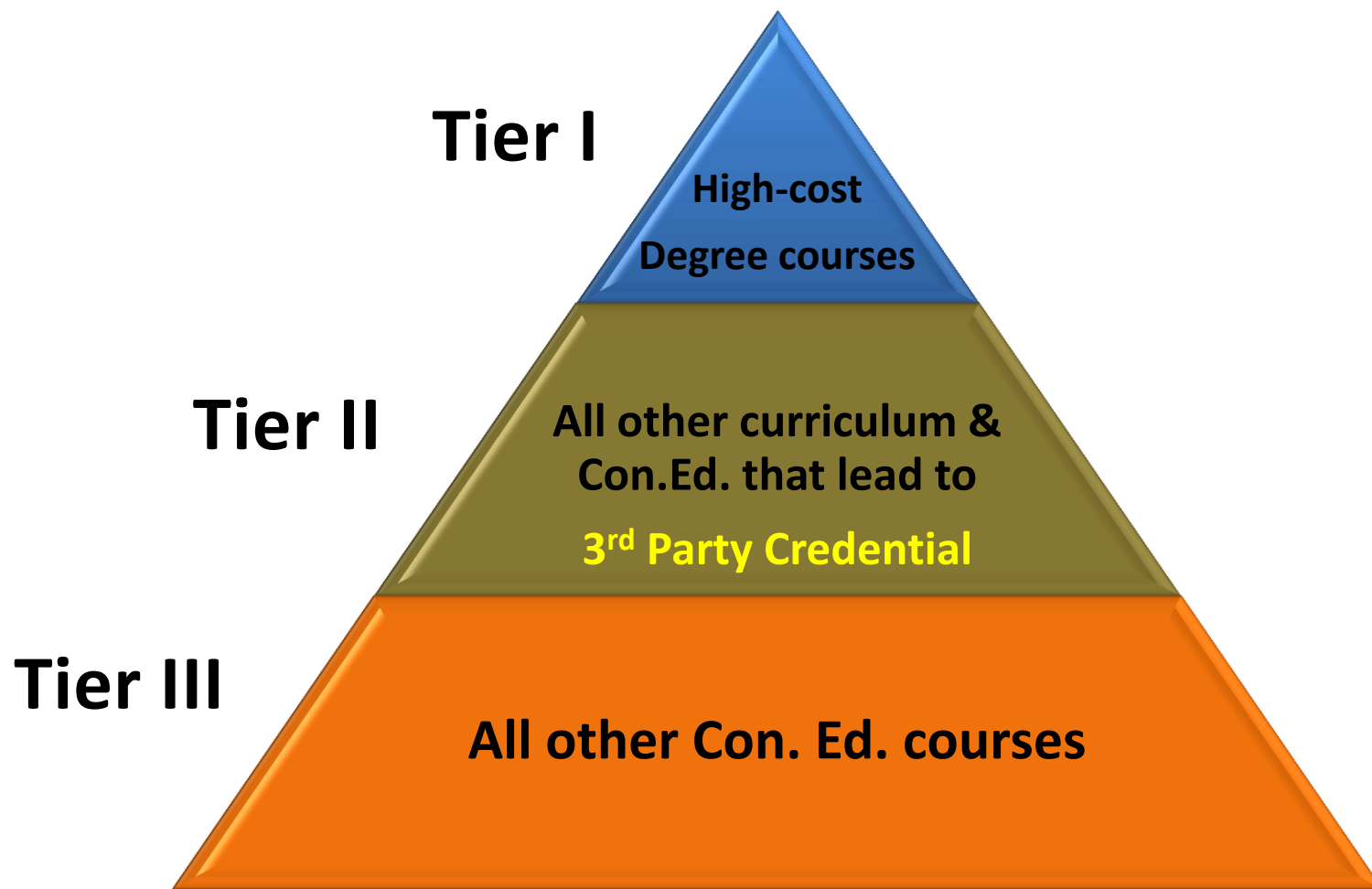
## 2010-11 Female-Male Enrollments

2010-11 Annual Unduplicated	Female	Male
Biological and Chemical Technologies	643	618
Construction Technologies	243	7,025
Engineering Technologies	848	6,272
Industrial Technologies	372	6,010
Transport Systems Technologies	373	6,809
<b>Technician Total</b>	<b>2,479</b>	<b>26,734</b>
	<b>8%</b>	<b>92%</b>
Agricultural and Natural Resources Technologies	598	1,731
Arts and Sciences	85,672	48,919
Business Technologies	32,308	19,273
Commercial and Artistic Production Technologies	1,890	1,927
Health Sciences	24,521	4,313
Public Service Technologies	34,297	12,552
Special Categories	34,484	24,825
<b>Non-Technician Total</b>	<b>213,770</b>	<b>113,540</b>
	<b>65%</b>	<b>35%</b>
<b>Total</b>	<b>216,249</b>	<b>140,274</b>
	<b>61%</b>	<b>39%</b>

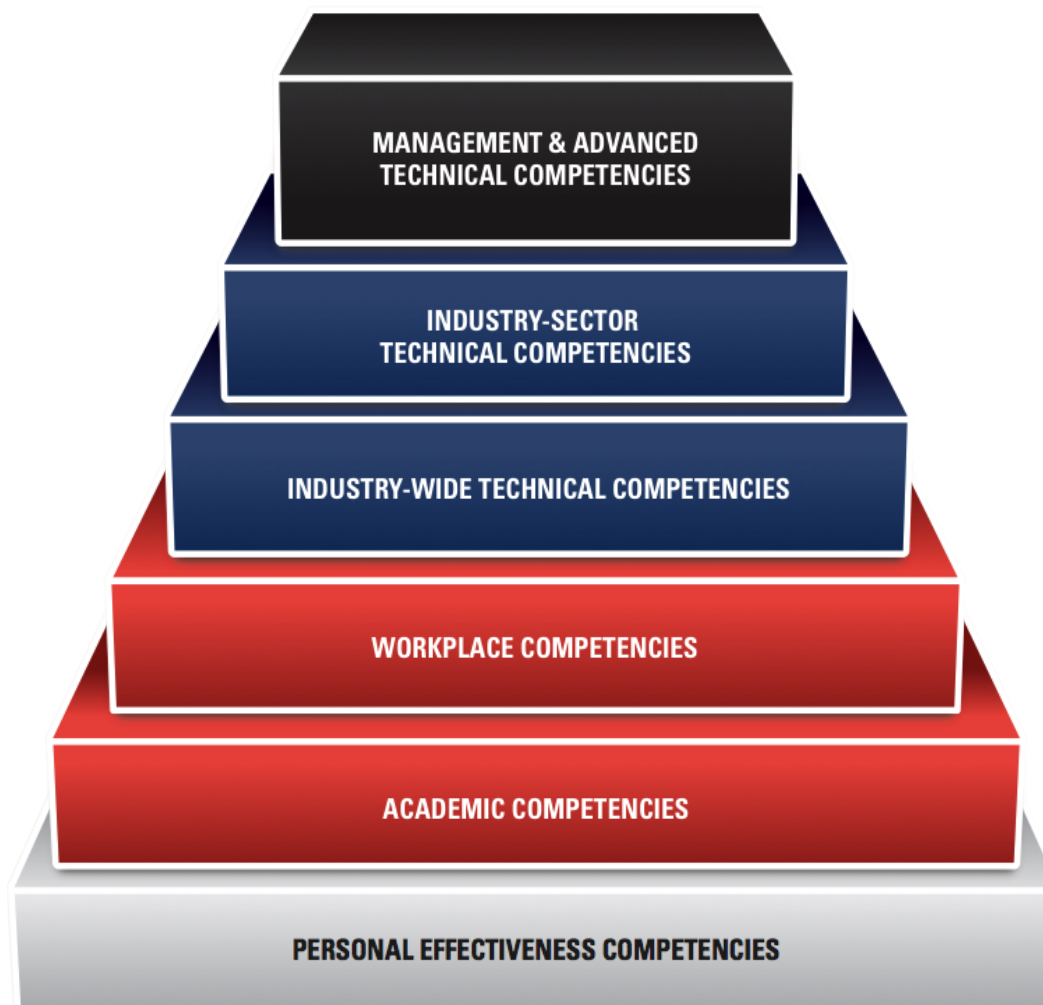
# What We Are Doing Differently

- New Funding Model
- New Curriculum
- Articulated High School Pathways
- Marketing CTE Careers (Mobile STEM Lab)
- Basic Skills Plus
- Industry-Recognized Credentials
- NC Back-to-Work

# Tiered (STEM) Funding



# National Association of Manufacturing Endorsed Skills Certification System



# Pathways to Success

## CTE Agriculture Agribusiness Example

Level	Courses								Certifications & Degrees
9	English I	Algebra I or Integrated Math I	Environmental Earth Science	World History	Health/PE	** MITA Word, PPT	Agriscience Applications	Freshman Career Management	MITA (2)
10	English 11	Geometry or Integrated Math II	Physical Science	Civics	*Animal Science I	Horticulture I or Foods I	** MITA Excel, Access	Agricultural Mechanics I	MITA (2) & OSHA Safety Certification
11	English 111	Algebra II or Integrated Math III	Biology	<i>AGR 140 Agricultural Chemicals(3)</i>	*Animal Science II	HS Agricultural Class or Foods II	**AGR 150 Ag-O-Metrics (3)	**AGR 110 Agricultural Economics (3)	Career Readiness Certification (CRC) (9)
12	English IV	4 <sup>th</sup> Math Aligned with student's plan	US History	**AGR 212 Farm Business Management (3)	<i>AGR 139 Introduction to Sustainable Agriculture (3)</i>	**AGR 210 Agricultural Accounting(3)	**AGR 214 Agricultural Marketing (3)	**AGR 213 Ag Law & Finance (3)	Pesticide Certification & High School Diploma <i>Agribusiness Technology 18 hour Certificate (15)</i>
Summer	COE 112(coop) or AGR 131 Market Garden Lab (2)	<i>COE 110 World of Work (1)</i>	<i>ACA 111 College Student Success (1)</i>	*ANS 110 Animal Science (3)	**CIS 110 Intro to Computers(3)				
1	<i>ANS 210 Livestock Production Issues(3)</i>	BIO 160 Introductory Life Science (3)	<i>ENG 111 Expository Writing (3)</i>	AGR 170 Soil Science (3)	<i>Eng 114 Professional Research &amp; Reporting(3)</i>	<i>BUS 151 People's Skills(3)</i>	PSY 150 General Psychology (3)		<i>Agribusiness Technology Diploma 43 hours</i>
2	<i>BUS 137 Principles of Management (3)</i>	AGR 262 Weed ID and Control(3)	ANS 160 Animal Waste Management (3)	<i>HUM 110 Technology and Society(3)</i>					<i>Agribusiness Technology AAS Degree 67 hours</i>

<b>Core Courses</b>
<b>CTE High school courses</b>
<b>Articulated Courses</b>
<b>Community college courses</b>

\* Articulated credit for ANS 110 Animal Science  
 \*\* Recommend Four MS Certifications articulate to CIS 110.  
 \*\*Agribusiness Technology Certificate



# Career and College Promise: CTE Pathways

## Example: Asheville-Buncombe Tech CC

- Automotive Systems Technology
- Computer-Integrated Machining
- Criminal Justice Technology
- Entrepreneurship
- Heavy Equipment and Transport Technology
- Industrial Systems Technology
- Web Technology
- Welding Technology

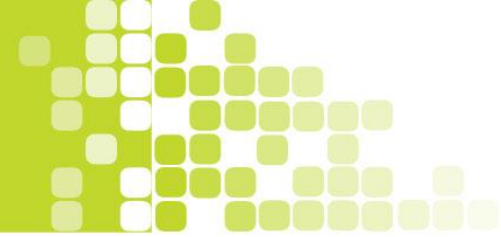
# Reaching Future CTE Students



# Basic Skills Plus Career Pathways

## Top Ten Basic Skills Plus Programs

- Certified Nurse Aide I
- Welding/ Welding Technology
- Medical Office Administrative Procedures/Medical Office Technician
- HVAC/ HVAC & Refrigeration/ Heating & Air Conditioning
- Early Childhood Administration
- Culinary Technology/Culinary Technician/Culinary Arts
- Automotive Technology/ Automotive Systems Technology
- Office Administrative Systems/Office Administration
- Machining/ Machine Operator
- Electrician/ Electrical/Electronics



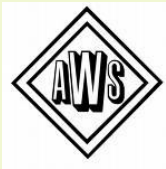
### **National Career Readiness Certificate**

- 107 Certificates issued
  - 1 platinum
  - 25 gold
  - 68 silver
  - 13 bronze



### **National Institute for Metalworking Skills**

- 47 Certifications issued
  - 24 Measurements , Materials, and Safety
  - 23 Job Planning, Benchwork, and Layout



### **American Welding Society**

- 12 D1.1 certifications have been issued



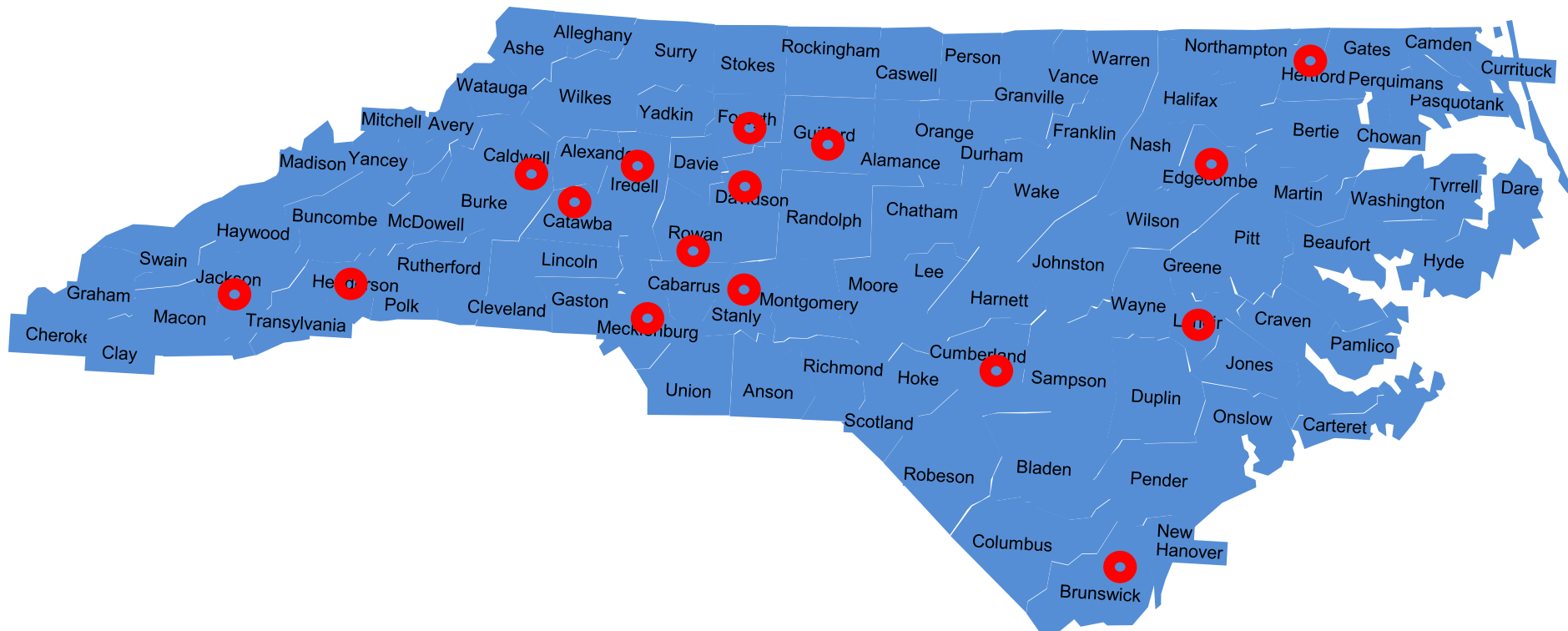
### **Manufacturing Skill Standards Council**

- Our first group of students will test in this area during the month of October

# North Carolina Career Readiness Certifications

Certificate	Percent	Total
Bronze	24.1%	34,556
Silver	57.2%	82,194
Gold	18.7%	26,842
Total Certificates Earned		143,592

# NC Back-to-Work Initiative



● NC Back-to-Work Community Colleges

# **Help Wanted:**

## **Meeting the Needs of NC Employers**

- Targeted Year-Round Funding for CTE
- Extend/Scale NC Back-to-Work
- Strengthen CC/High School Collaboration on Technician Programs
- Expand, Renovate and Equip CC Shops/Labs



# Questions?

**On behalf of the 58 NC Community Colleges,  
thank you.**